STATISTICAL BULLETIN
Metropolitan Life Insurance Co.

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GAIN IN LIFE EXPECTANCY OF INSURED WAGE-EARNERS AS A RESULT OF HEALTH SERVICE.

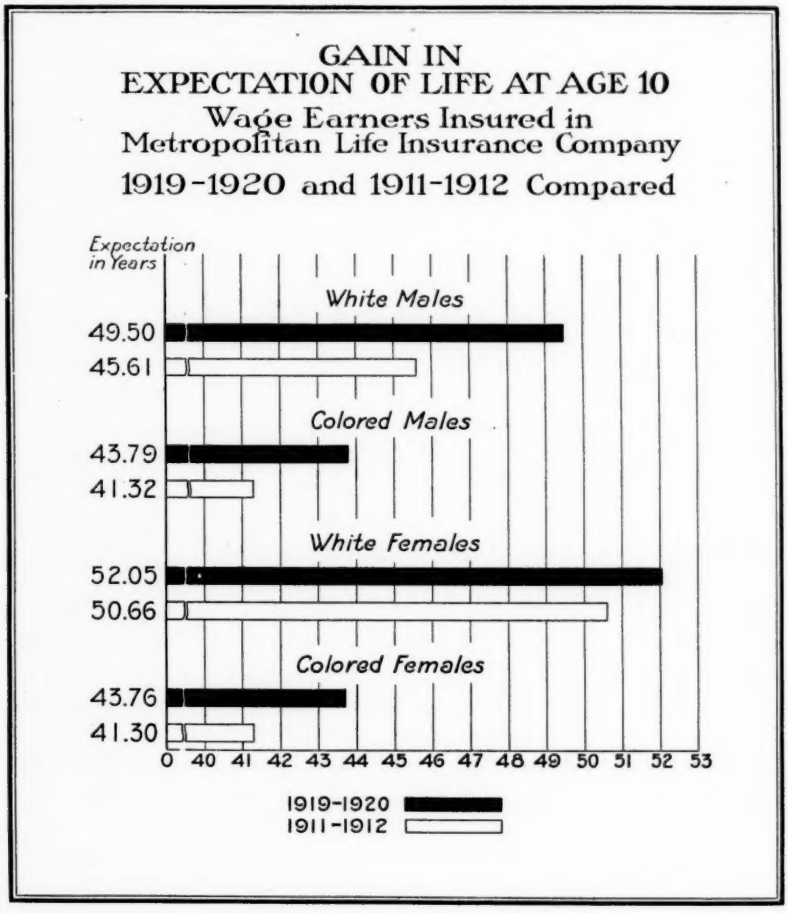
There is probably no more convincing instance of the beneficial effect of a well considered campaign of health education and of health service than that afforded by the mortality experience of the policyholders of the Industrial Department of the Metropolitan Life Insurance Company. In 1910, this Company put into operation a plan, the purpose of which was to reduce the death rate among insured wage-earners. From year to year, the programme was extended and now embraces in excess of thirteen million men, women and children of the wage working population who are policyholders. At the end of ten years, the death rate had been reduced more than one-fifth. A total of 38,000 fewer deaths occurred in 1920 than if the 1911 mortality rate had prevailed.

But, there is an even more instructive measure of the value of public health work than the reduction of the death rate. It is the added duration of life of the insured groups as measured by life-tables. At the beginning of the campaign, white males at age 10 could expect to live 45.6 additional years. At the end of the decade, this expectation was increased to 49.5 years. This means a clear gain of nearly four years for every insured white male. *There is no record of a like increase in the life span, within so short a period, in the whole literature of public health work.*

The white female policyholders did not show so great a gain as the white males. But, even for this group the expectation was increased at age 10 from 50.7 to 52.1 years, or a net gain of 1.4 years. The colored policyholders of each sex show gains of two and one-half years. Their expectation is now 43.8 years.

These figures are after all the ultimate test of the value of health work. They show at a glance what the effects are

in terms of a lengthened life-span. A year added to the duration of life of every person at age 10 is a very tangible addition to the assets of a country; for the ages beyond 10 are years of productivity. In connection with insured white males, the increase is virtually four years per person. If such an increase in expectation of life could be made general for the entire white male population of the United States, the gain to the present generation in this country would be stupendous. This is the lesson which must be drawn from the health work of the Company among its members. The following chart shows graphically the figures for each of the color and sex groups.



HOW DO FATAL ACCIDENTS ARISE?

Nearly 1,900 fatal accidents among insured wage-earners in the three months, April to June, 1921, have been studied to disclose the type of hazard which gives rise to the accident. We tried to discover how many accidents arose out of (a) occupation or industrial causes, (b) the use of public facilities (transportation systems, streets and highways, public buildings), (c) domestic life and (d) miscellaneous activities. We found that 937, or nearly one-half of all the accidental deaths (49.8 per cent.), arose out of exposure to some hazard in the use of public facilities. There were 289, or 15.3 per cent., of the total accidents where the person injured was using a transportation facility as a passenger; 182, or nearly 10 per cent. of these accidents occurred to passengers in automobiles. The use of streets and highways by pedestrians resulted in 300, or 15.9 per cent., of the accidental deaths. Of these 300 deaths of pedestrians, 202, or two-thirds, were caused by automobile injuries.

Accidents to persons while at work occurred in 248, or 13.2 per cent., of the total deaths reported. These deaths arising out of occupational exposure to accident were also studied in detail. Of this number, 32 occurred in mines and 28 among persons employed on steam railroads. Accidental drowning, under the caption of occupational activity, occurred in 23 cases. Deaths from electricity were registered in 14 cases.

Accidents in and about the home were responsible for 224, or 12 per cent., of the total accidents reported in this quarter of the year. More than one-half of these 224 accidental deaths occurred among women.

The Automobile as an Accident Factor.

The automobile seems to stand out above all other factors in this accident experience of the late spring and early summer. There was a total of 427 deaths in automobile accidents, and of these, 43 per cent. were those of passengers, 47 per cent. were deaths of persons using public highways and 8 per cent. deaths of chauffeurs, garage mechanics, street cleaners and others whose occupations exposed them to injury by automobiles. Considered by sex, two-thirds of the automobile accidents occurred among males. Considered by age, 54 per cent. of the deaths from automobile accidents and injuries occurred among children under 15 years of age and 15 per cent. more among persons 25 to 44 years of age.

More Information on Accidents Needed.

The fore going comment is offered in a preliminary way as an indication of what it is possible to do in recognizing the causes of fatal accidents and how the responsibility may be placed. Statistics of this character, covering the fatalities of a full year, would have greater value and are now being collected. Such facts as we have disclosed are valuable in directing practical safety work. In the course of time, the data will measure the effect, or lack of effect, of specific safety measures for accident prevention. It is suggested that other health statisticians classify and publish their accident returns in a similar manner and thus help to show where safety work needs to be strengthened and what community activities are sources of hazard. This will involve more diligent scrutiny of all returns of accidental deaths, and, perhaps, additional effort on the part of registrars to secure more complete data from hospitals, coroners and medical examiners on the exact manner in which fatal accidents occur.

LIFE EXPECTANCY OF THE FOREIGN-BORN IN THE UNITED STATES.

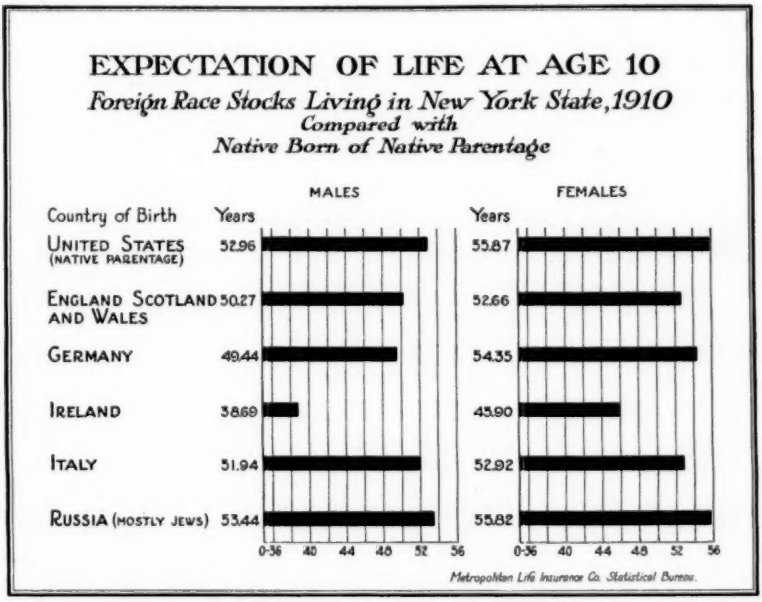
A study recently completed by the Company for the Second International Congress on Eugenics shows that among foreign race stocks living in New York State in 1910, the Russian-born have the highest expectation of life. In New York State, the members of this group are mostly Jews. Among males, at age 10, the expectation of life of the Russian-born was 53 years and among females, 56 years. This is practically the same expectation of life as that of the native-born of native parentage.

The least favorable expectation was recorded for the Irish-born. Among males of this group the expectation was only 39 years; among females, 46 years. There is a difference, therefore, of practically 14 years for males, and of 10 years for females, between the expected after-life-time of the Irish- and Russian-born populations in New York State.

The Italian-born, like the Russians, show favorable expectations. Males at age 10 had an expectation of 52 years; females, an expectation of 53 years. The British-born came next in order of favorable expected after-life-span. Among males of this group the expectation was 50 years, and among females, 53 years. With the exception of the Irish-born, the German-born males showed the lowest expectation (49 years). German-born females, however, showed a better

expectation of life (54 years) than any of the other foreign-born females, with the exception of Russians.

It is very important to observe that these foreign-born stocks living in New York State, have, with the exception of the Russians and the Italians, lower expectations of life at age 10 than are found in the populations of their native countries. It is difficult to understand why, for example, British-born males and females living in New York State should have a shorter life span by about 3 years than the population of England and Wales. Nor is it clear why German-born males should suffer a loss of nearly 2 years by living in this country. The undoubtedly better economic conditions which the foreign-born enjoy here are not sufficient, apparently, to offset the difficulties of adjustment of the newcomers to American conditions. The figures emphasize the importance of concentrating health activities on foreign-born stocks living in the United States. The following chart illustrates the figures on the life expectancy of the foreign-born.



SOME FACTS ABOUT HEART DISEASE AMONG WAGE-EARNERS.

The death rate from heart disease during the last ten years has declined much more rapidly among insured wage-earners of the

United States and Canada, as reflected by the insurance statistics of the Metropolitan, than among the general population of the United States Registration Area. The decline was close to 20 per cent. in the decade among the insured, which is more than twice the relative decline in the general population. During some of these years, the heart disease death rate was actually increasing in the general population while it was declining among the insured. Obviously, the insured group is enjoying the benefit of some activity which is not available in equal measure to the general population.

It is not easy to explain this difference. One might expect wage-earners to maintain their higher death rate from heart disease because of their more strenuous labor and their more difficult conditions of life. Yet, it is possible that the favorable economic conditions among wage-earners which obtained in the last three or four years of the decade have played a large part in the reduction of the death rate from heart disease. The general population includes persons of fixed salaries and others whose economic condition was improved little or not at all during the years of price inflation. The hygienic conditions of industry are also improving for wage-earners, and this group is no longer subjected to some of the stresses and strains which have a close relation to the production of heart disease. Wage-earners insured in the Metropolitan have also enjoyed the benefits of the Company's nursing service during the ten-year period and have profited from the distribution of well prepared literature on personal hygiene. All of these elements have probably played their part in producing the greater downward tendency of the death rate among wage-earners than in the general population.

During the first seven months of this year, the rate for organic heart disease has been 7 per cent. lower than for the corresponding period last year. Even with this marked reduction in mortality, however, heart disease attained first place in the list of causes of death among white wage-earners during the first six months of 1921. This was due to the greater drop in the tuberculosis death rate among white policyholders. The supremacy of heart disease was established several years ago in the records of the general population of the Registration Area. This important fact led to the discussion of means of preventing heart damage and of relieving by occupational regulation, and by treatment, the large number of persons afflicted with cardiac ailments. The testimony of this year's Industrial mortality statistics is that, for insured white persons at least, the most pressing health problem of the future will be the

prevention of injury to heart tissue by the suppression of infectious disease, by advances in the treatment of such diseases, and through better handling of the cardiac cases now in the community. But with this newer development, there should be no slackening in the attack upon tuberculosis.

THE SCHOOL SUPERINTENDENT'S OPPORTUNITY FOR CONTROLLING DIPHTHERIA.

The school superintendent and his assistants have an opportunity to help control the exceedingly high prevalence of diphtheria which threatens the school population of the United States and Canada during the coming autumn and winter. The late autumn and early winter are the months when diphtheria takes its greatest toll. From present indications, the diphtheria death rate this year will be higher than that of 1920.

How can school superintendents help with this problem? The answer is, by asking the local health officers to test all school children for susceptibility to diphtheria and to immunize the susceptibles in accordance with approved practice. The school superintendent, through the principals and teachers, the school medical inspectors and nurses, can supply the health officer's main need, i.e., the consent of the parents to have the tests made and to grant permission for the immunization of susceptible children. The New York City Department of Health conducted successfully during the spring of 1921 about 52,000 Schick tests. This was accomplished almost entirely because of the cooperation of the principals and teachers in the schools. The devoted efforts of this group secured parental consents and the cooperation of the children. Furthermore, it was possible to reach through school children, the younger boys and girls in the family of pre-school age.

There is no doubt whatever that the school authorities of American and Canadian cities are the one instrumentality through which the health officer may work in protecting the children of his city from this dangerous disease. In the year 1919, about 15,000 children under 15 years of age died from diphtheria in the United States and this corresponds to wiping out an entire child population of a city the size of Salem, Mass., or Elmira, N. Y. These facts are a challenge to the professions of education and public health in this country. There is no doubt, however, that when the extent of the prevailing menace of this almost entirely preventable disease is brought to the

attention of school superintendents, they will cooperate with all their might and main to prevent as much diphtheria as possible during the coming autumn and winter. The work should be done and the means are at hand; all that is needed to secure a substantial saving in child life is the cooperation of the school authorities with the health officials.

HEALTH RECORD FOR AUGUST, 1921.

Health conditions among the Industrial policyholders continued favorable during August. The death rate (8.1 per 1,000) was very low, although slightly higher than the figure registered for July. The actual increase in the number of deaths in August, as compared with July, was 478, and the most important single factor in bringing about the higher rate was an increase of 119 deaths from diarrheal diseases. There were 84 more deaths from tuberculosis registered during August, which was responsible for a rise of 6.8 per cent. in the death rate for tuberculous diseases. There was also an increase in the number of deaths from typhoid fever, and these, together with 38 more automobile fatalities, are some of the causes responsible for the slight increase in the August death rate, as compared with that for July. The figure for the month, however, was 2 per cent. lower than that for August of last year.

The death rate for the general population of the large cities of the United States in August was 10.6 per 1,000. This is slightly lower than the rate for the preceding month and that for the corresponding month of 1920.

Poliomyelitis.

Poliomyelitis and typhoid fever were diseases on which the attention of public health authorities was concentrated during August. The former was especially prevalent in Illinois, Minnesota and New York, although it was reported widely throughout the country. In Minnesota, more than 400 positive and suspected cases were reported. Representatives of the State Health Department were sent to several sections in the effort to check the spread of the disease and in Illinois, as well as in New York, warnings of the importance of taking timely preventive measures were issued. In New York State, there were 419 cases reported between July 1 and September 9. In New York City, statistics covering the first seven months of 1921 show a decided increase in poliomyelitis over the corresponding months of 1920; in 1921 to August 18, 116 cases were reported; in 1920, the corresponding figure was 21 cases.

Officials of the City Health Department believe that there is no sufficient cause for fear that the disease will reach epidemic prevalence. Poliomyelitis has also appeared at Iowa City and Davenport Iowa. In the former, Sunday Schools were suspended as a precautionary measure.

Typhoid Fever

There was a general increase in typhoid fever during August. This, to some extent at least, is seasonal. North Carolina, New York, Maryland, Kentucky and Kansas reported the greatest number of cases. Local epidemics in six Pennsylvania counties were traced to impure milk and water supplies. Slight epidemics were experienced in Bedford, a town near Cleveland, and in Oak Hill, Jackson County, Ohio. In Burlington County, New Jersey, a number of cases have developed and the source of infection is said to have been traced to a church supper several weeks ago. In Wichita, Kansas, a considerable number of cases of typhoid and paratyphoid continue to be reported, the majority of the patients having been customers of a certain dairy. Impure milk is also believed to be the source of an epidemic in Otsego, Michigan.

There is some indication of a slackening in the rate of fall of the typhoid fever death rate this year. May this not be due to the "wearing off" of the protection afforded by the millions of anti-typhoid inoculations performed by the Army and Navy during 1917 and 1918? For the year 1921 up to September 10, the typhoid fever death rate was 5.3 per 100,000 in the Industrial Department of this Company, as compared with 5.6 for the same period of 1920. This suggests that there should be no slackening in community effort against the disease and that wherever populations are exposed, the practice of anti-typhoid inoculation should be encouraged.

Lethargic encephalitis was reported during the month in California, Illinois, Maryland, Massachusetts, Nebraska, New York, Wisconsin, and Connecticut, Florida and Louisiania.

Pellagra.

On August 15th, the Surgeon General of the United States Public Health Service reported to the President that pellagra was increasing and spreading rapidly, despite denials of state officials. During the first part of the month, a United States Public Health official was sent to Royston, Georgia, for the purpose of investigating a reported outbreak of the disease.

Typhus fever was reported from Monroe County, Ohio, from Bridgeport, Connecticut, and from Missouri.

Information from many sources indicates that the year 1921 will record a new maximum for automobile fatalities. In New York state, 1,072 persons were killed by automobiles during the first eight months of the year; in the month of August alone, 217 people lost their lives in this manner.

Progress in Health Protection.

Several states were active during August in planning and undertaking health work of various kinds. The outstanding features were anti-tuberculosis campaigns in Ohio, Michigan, and Utah, and maternal and infant welfare work in Pennsylvania, North Carolina and Ohio. In the last named state, a Bureau of Tuberculosis has been recently established in the State Health Department. This Bureau is to organize tuberculosis clinics for rural sections. On August 3rd, representatives of the Utah Public Health Association, State Board of Health and the United States Public Health Service met to discuss a programme for the investigation of tuberculosis on a state-wide basis. In Minnesota, tuberculous school children are to be educated and to receive medical treatment at the same time at the Lymanhurst Hospital School. The Mississippi Valley Conference on Tuberculosis was held in September and reports were received from the states of Illinois, Indiana, Iowa, Minnesota, Missouri, Nebraska, North Dakota, South Dakota, Wisconsin and Ohio. In Pennsylvania, the Department of Public Welfare, a branch of the State Board of Health, has started a campaign for better care of women before and immediately after childbirth. In North Carolina, the Colored Women's Federation of Rocky Mount is instructing colored mothers in the care of infants.

A representative of the United States Public Health Service has been sent to Indiana to begin the collection of vital statistics pertaining to the life and health of miners and quarry-men in that state.

In Alabama, county health officers met and discussed plans for malaria control work on a country-wide basis.

In Ohio, the Talley-Chatfield Law became effective on August 16th. This law gives the State Department of Health power to order improvements on its own initiative in public water supplies. Its object is to safeguard against water-borne epidemics.

The table below displays the mortality data among Industrial policyholders for August and July, 1921, for August, 1920, and for the year 1920:

METROPOLITAN LIFE INSURANCE COMPANY.

Death Rates per 100,000 for Principal Causes, Premium-paying Business in Industrial Department.
(Annual Basis)

MONTHS OF JULY AND AUGUST, 1921, AND OF AUGUST, 1920.

CAUSES OF DEATH	RATE PER 100,000 LIVES EXPOSED			
	Aug., 1921	July, 1921	Aug., 1920	Year 1920
TOTAL—ALL CAUSES	809.0	768.5	825.5	989.4
Typhoid fever	10.3	7.2	8.2	6.7
Measles	1.1	2.9	3.2	8.5
Scarlet fever	3.7	4.6	3.3	6.0
Whooping cough	4.3	3.5	6.7	6.6
Diphtheria	14.3	13.0	12.2	22.1
Influenza	2.5	2.6	5.9	53.5
Tuberculosis (all forms)	113.5	106.3	121.2	137.9
Cancer	72.3	68.1	68.0	69.8
Meningitis (all forms)	6.2	5.2	6.2	5.2
Cerebral hemorrhage	48.0	51.1	51.5	61.3
Organic diseases of heart	100.9	98.8	95.9	117.0
Pneumonia (all forms)	26.8	28.1	32.0	106.1
Other respiratory diseases	9.9	8.8	12.2	18.2
Diarrhea and enteritis	31.3	20.7	30.4	15.8
Bright's disease	60.7	58.4	61.3	70.8
Puerperal state	16.3	16.4	20.2	23.0
Suicides	8.0	6.9	6.0	6.1
Homicides	6.3	6.2	6.8	5.8
Other external causes (excluding suicides and homicides)	70.2	75.3	76.9	60.1
Traumatism by automobile	13.8	10.4	14.6	11.1
All other causes	202.5	184.4	197.4	188.9

Correspondence on the subjects discussed in these BULLETINS may be addressed to the Editor:

STATISTICAL BULLETIN,
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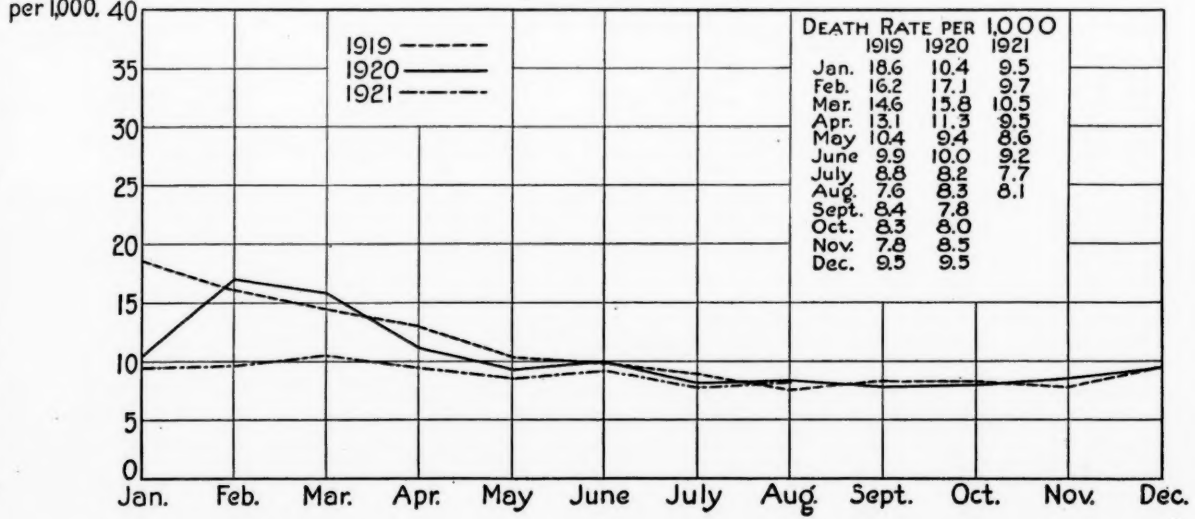
Metropolitan Life Insurance Co.

INDUSTRIAL DEPARTMENT

Death Rate per 1,000 in Specified Months of 1919, 1920, 1921.

(ANNUAL BASIS)



DEATH RATE PER 1,000	1919	1920	1921
Jan.	18.6	10.4	9.5
Feb.	16.2	17.1	9.7
Mar.	14.6	15.8	10.5
Apr.	13.1	11.3	9.5
May	10.4	9.4	8.6
June	9.9	10.0	9.2
July	8.8	8.2	7.7
Aug.	7.6	8.3	8.1
Sept.	8.4	7.8	
Oct.	8.3	8.0	
Nov.	7.8	8.5	
Dec.	9.5	9.5	

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